

2.8 Liter V6

Note: As there have been several revisions to the 60-degree V6 (such as displacement), and most of my knowledge and info is on the early versions, the scope of this article focuses on the 1986 and prior versions. I would appreciate any and all input and ideas on later versions.

First, a little production history

The 2.8 liter V6 is a unique member of the Chevrolet engine family. It is the only engine used in both front and rear wheel drive applications. It is also the only engine with 60 degrees between cylinder banks. These two characteristics make the 2.8 liter V6 a very lightweight and compact power plant with outstanding performance potential. The 2.8 liter V6 was introduced in 1980 as a tranverse-mounted engine in the Citation. A rear wheel drive version debuted in 1982 in the S10 and Camaro. It originally had a 2bbl carburetor. These early versions had very little power. All that changed in 1985 when the dull E2SE was replaced with multi-port fuel injection on some models, including the Cavalier for the first time.

In 1987 the V6 was given the same Generation II improvements that the 2.0 liter four received, further enhancing performance. I don't have alot of experience with the Gen II V6, so my emphasis is on the 1986 version. Anybody with some ideas for the Gen II V6 please contact me. Again, see the **Chevrolet Power Catalog** for more info.

SPECIFICATIONS

TYPE	60 degree V6	NET HORSEPOWER	125 @4800 RPM
MAKE	Chevrolet	TORQUE	155 @2400 RPM
DISPLACEMENT	173 cu. in.(2.8 Liter) High Output*	CYLINDER HEADS	cast iron
PRODUCED IN	United States	VALVE ARRANGEMENT F/R	R- E I E I I E L- E I I E I E
BLOCK	cast iron	FUEL DELIVERY	Multi-Port Fuel Injection
BORE	3.50 in. (89mm)	IGNITION	High Energy (breakerless)
STROKE	2.99 In. (76mm)	READY-TO-RUN WEIGHT	390 pounds

* the high output version has larger valves than the regular version. Also the main bearings are larger

STREET PERFORMANCE

The 2.8 liter V6 is a very capable performer, especially in a light weight Cavalier. GM put this engine in everything including S-10s Grand Prix's Camaro/Firebirds Fieros etc etc. The Cavalier and Fiero were about the smallest things they put it in. When tuned right, it can really accelerate well. Here are a few tips and tricks that I've found that work well and don't cost much.

K&N:

This one is obvious. Engines make power by flowing air and combining it with fuel. The more airflow, the more power. A K&N is a much less restrictive air filter than a stock paper one. Although the drop in kind are the easiest, there is an even better way. The stock air filter container is also very restrictive. You can get rid of both the paper filter and the container in one fell swoop for a very free flowing intake. Get a Mustang 5.0 magazine and find a company that sells a 7" conical K&N filter. This filter is very high flowing and it will attach directly to the mass airflow sensor for a perfect fit. Just remove the paper filter, the metal container it was in and the plastic lid and put the K&N right on the end of the airflow sensor.

Cold Air:

Cold air is denser than hot air. The above modification will flow a lot more air than stock, but it is taking hot air from under the hood. Just get some 3" dryer vent from a hardware store and make a box around the K&N with some thin sheet metal. Then just run the dryer vent from the bottom of the metal box to the outside air at the front of the car. This makes a BIG difference. The engine will pull hard to 5000 rpm.

Hotter coil:

The coil is that thing with one short spark plug wire that goes to the middle of the distributor. It provides the spark energy to the spark plugs. You can get a high performance one from any auto parts store that sells ACCEL stuff. It cost about \$57 and is very easy to install. The increased voltage will add a lot of energy to the spark. Starting is easier, spark scatter is reduced on the top end, and you can gap the spark plugs wider.

But the really cool thing is throttle response. It responds RIGHT NOW.

Wires: Get some good wires to go with the hotter coil. Spiro wound wires are less resistive and can take the heat from the bigger coil.

Clean intake:

Carbon builds up in the intake manifold over time and restricts airflow. This is bad. To keep it clean, buy a can of Carburetor cleaner or Intake Manifold Spray (it's the same stuff, trust me) and with the engine idling, remove small line right before the throttle body and spray half of the can in while working the throttle blade

back and forth to make the engine rev. This will really clean out the manifold. If you notice a huge difference after this, your intake was SERIOUSLY clogged.

Muffler:

Get the freest flowing muffler you can, the one with two outlets instead of one.

Oil:

Synthetic oil, though expensive, is much better than regular oil. It can add some horsepower because of it's increased performance in the heat of the engine.

Exhaust heat:

The more heat stays inside of the exhaust manifold, the less back pressure will be present. Get some exhaust manifold wrap (or tape as it's sometimes called) and wrap it around the front exhaust manifold.

Keeps the underhood temperatures down also. Cheap and easy.

Some expense:

A company, Mantapart, makes a bigger throttle body and some other cool stuff like a 3.1 liter stroker kit. I don't have the money for this stuff yet though.

IF DRAG RACING:

Drag racing is a blast. Here are some cheap or free tricks. Take out ALL the weight you can. Especially the spare tire, jack, back carpeting, anything that ain't bolted down. Less weight is more acceleration. Don't do a burnout. Radial tires work best without it. Don't leave the line at idle. Rev it and leave as hard as possible WITHOUT spinning the tires. That hurts the time. The 2.8 V6 makes power to about 5000 rpm. Shift about there, don't bog it. (Don't rev it too high, either, I blew an alternator once. OOPS) There is a very big horsepower trick takes some care and precaution. When at the track with the car off in the staging lanes, get a ½ inch drive ratchet or torque wrench and take all of the tension off of the accesory drive belt. The engine uses power to turn your power steering, alternator, water pump, AC, etc etc. If you disconnect them, you will free up a lot of power. But push your car through the staging lanes and don't start it until you absolutely have to. Make the run and on the return road, pull over and put the tension back on so the engine can re-cool and the alternator can recharge the battery. I haven't tried this yet, so be careful and I am not responsible for any damage. If you're careful, it will be fine.

Happy Motoring

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A BIG special thanks to Greg for his contribution

At the following links you will find part#'s:

K&N Intake Upgrade

Ignition

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